REMARKS

Applicant would like to thank the Examiner for his careful consideration of remaining claims for this Application. The claim remarks are addressed in the same order as used by the Examiner.

General Objection

Claim 285 has been cancelled. As requested by the Examiner, remaining claims have been carefully checked for minor errors, and clarifying language has been added where appropriate. Specifically, Claims 272 and 287 have been revised to remove minor wording errrors. No new material has been added.

Objection to Claim 286 under 35 U.S.C. 102(e)

Claim 286 has been rejected as allegedly anticipated by Meier (U.S. Patent Number 6,847,620), hereinafter referred to as ***Meier***. In ***Meier***, it is alleged that "an access point is configured to receive identification information from the portable computing device indicating a VLAN of a plurality of possible VLANs." The identification information that ***Meier***'s access point uses is in a formatted protocol called GARP or an extended GARP protocol called GVRP. ***Meier*** shows, for example, the format for a GVRP JoinIn frame (Col. 14, lines 43-58). As line 55 shows, the VLAN identifier is contained in the GVRP frame format, and is determined from the received GVRP frame.

In contrast, Applicant's Claim 286 is intended to indicate that the VLAN identifier is derived from an 802.11 System Identification (SID), and includes one of more of a 802.11 Service Set Identifier (SSID), an Extended Service Set Identifier (ESSID) and a Basic Service Set Identifier (BSSID). ***Meier***'s GVRP JoinIn frame does not contain an SSID, an ESSID, or a BSSID. ***Meier*** never mentions SSIDs or ESSIDs, and mentions a BSSID once in his specification (Col. 7, 35-39), "inbound multicast frames from stations are sent to a unicast BSSID of the parent AP." There is nothing to indicate that a VLAN

ID is determined from a BSSID transmitted from a portable computing device as in Applicant's invention, and in this reference, ***Meier*** merely forwards frames to a BSSID of the parent AP and does not process the BSSID further. In order to avoid any confusion, Claim 286 has been further clarified and distinguished from ***Meier***.

Objections under 35 U.S.C. § 103

To establish a *prima facie* case of obviousness, three basic requirements must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), as quoted in MPEP 2143.

Turning to the third requirement, the combined teachings of the references cited by the Examiner fail to teach or suggest all of the limitations in Applicants' claims and therefore are insufficient to establish a *prima facie* case of obviousness.

The claimed subject matter is directed toward partitioning a set of potential virtual local networks (VLANs) to assign two or more dedicated VLANs, where a dedicated VLAN is assigned to connect wireless devices to a particular network service provider. The Examiner rejected claims 146-177, 179-190, 192-210, 212-221, 256,-279, and 287-302 under 35 U.S.C. 103(a) as allegedly being unpatentable over ***Meier*** in view of Delaney at al. (U.S. Patent Number 6,937,574, hereinafter referred to as ***Delaney***). Applicant's first independent claim is claim 146, in which a network with a first access point receives VLAN identification information from a wireless portable computing device "wherein each of at least two of the plurality of possible VLANS

corresponds to a different respective network service provider from among a plurality of network service providers." Applicant's method partitions the network by assigning a plurality of VLANs to distinct network service providers, i.e. requiring a partial partitioning of the plurality of possible VLANS, where at least two of the possible VLANS are assigned to distinct network service providers.

In general comments, the examiner concedes "***Meier*** did not explicit state that each of at least two VLANS corresponds to a different respective network service provider." The examiner further alleges "However, ***Delaney*** does explicitly disclose this feature as his system maintains carrier virtual LANs that customers may utilize by subscribing to services provided by a network service provider." The "carrier virtual LANs" or CVLANs that the examiner is referring to are defined in ***Delaney*** (Col. 7, lines 23-32):

> "A typical customer will have customer LANs 20 using IEEE 802.1 protocols at more than one site and will want to exchange data packets in the form of IEEE 802.3 data frames between elements of the LANs 20 at different sites. As will be explained below, such customers may subscribe to a Carrier Virtual LAN (CVLAN) service provided by the NSP [network service provider] using the NSP network 10. The CVLAN service provides transparent LAN connectivity between customer LANs at different sites with full isolation between the virtual private LANs (or CVLANs) of many distinct customers." [bracketed term added.]

A customer utilizing a CVLAN by subscribing to services provided by a network service provider is not the same as explicitly featuring "at least two VLANS corresponding to a different respective network service provider." The examiner unfairly conflates VLANs and CVLANs citing ***Delaney***, but ***Delaney*** distinguishes VLANs from CVLANs and does not assign VLANs to distinct network service providers. In fact, ***Delaney*** does exactly the opposite: he relies on reusing a same VLAN identifier in multiple CVLANs assigned to different network service providers. ***Delaney*** (Col 14, lines 11–27):

"Note that the arrangement described above enables a particular CVLAN within the network 10 to be mapped onto one VLAN identifier in a first IEEE 802.1 VLAN identifier space supported by a first external router 300 or plurality of routers 300. The same CVLAN within the network 10 may be mapped onto another VLAN identifier in a second IEEE 802.1 VLAN identifier space supported by a second external router 302 or plurality of routers 302, so assignment of VLAN identifiers in distinct external IEEE 802.1 VLAN networks need not be coordinated. Moreover, the arrangement described above enables the same VLAN identifier indifferent IEEE 802.1 VLAN identifier spaces to be mapped onto different CVLANs in the network 10. This is advantageous because, as noted above, each IEEE 802.1 VLAN identifier space is limited to 4095 distinct VLANS, whereas the network 10 can support many times that number of CVLANs."

The examiner alleged that "It would have been obvious to one of ordinary skill in the art to modify the system of ***Meier*** by adding the ability to have each VLAN correspond to a respective network service provider as provided by ***Delaney***."

As noted above, ***Delaney*** does not add, teach, suggest, or motivate the ability to have each VLAN correspond to a respective network service provider. ***Delaney*** does **not** partition the network by VLANs corresponding to distinct network service providers, but rather, ***Delaney*** partitions the network by dividing network traffic into traffic using distinct sets of virtual ports. As noted in ***Delaney'***s abstract, "In methods and apparatus for routing packets through a communications network, a respective distinct broadcast address is assigned to each of a plurality of distinct sets of virtual ports. No virtual port belongs to more than one of the distinct sets." ***Delaney*** encapsulates each packet using the partitioned ports. Because a distinct broadcast address is assigned to two or more sets of ports, ***Delaney*** is able to assign a unique CVLAN to each combination of a distinct address and one of the set of ports, and is therefore able to expand the number of CVLANs over the number of distinct addresses using his partitioning system.

Further, the examiner adopted ***Delaney*'s** motivation ("Here the combination satisfies the need for methods that enable a service provider to provide for a very large number of VLANs on shared network facilities") as a motivation to satisfy an obvious need for Applicant's invention. Unlike ***Delaney***, however, Applicant's invention assumes that there is no such need in that, in the application, the 4095 distinct and usable VLAN identifiers in a standard 802.1D network provide a sufficient number of VLANs on shared network facilities, and at least a two-member subset of the VLANs can each be dedicated to a network service provider. Applicant's invention is instead motivated to provide an efficient wireless structure which may be used by two or more wireless service providers, without limiting the available wireless LAN services as in prior art RADIUS and TACACS+ systems, and without the security issues of prior art systems.

Specifically, in Applicant's claim 146, the examiner alleges that the limitation "wherein each of at least two of the plurality of possible VLANs corresponds to a different respective network service provider from among of plurality of network service providers" is disclosed by ***Delaney*** (col. 14, lines 11-27 and col. 14, lines 33-44). Col. 14 lines 11-27 are cited above and do not suggest a partitioning of VLANs by network service providers. The "arrangement described above" in Col. 14 lines 11-27 is describing ***Delaney*'s** Fig. 8 flowchart (col. 13 line 47 to Col 14, line 10). The flow chart describes VLAN translation of VLAN identifiers in encapsulated packets, and does not assign a VLAN to a unique network service provider. ***Delaney*'s** Col. 14, lines 33-44 is as follows:

> "In the arrangement of FIG. 7, each customer can choose his router-access VLAN identifiers arbitrarily. There is no requirement that VLAN identifier choice be coordinated between multiple customers. Each ISP router 300, 302 participates in only one VLAN identifier space. The access switch 22 translates VLAN identifiers between this one VLAN identifier space and the many VLAN identifier spaces of the NSF network 10. The NSP network 10 has one VLAN identifier space for each distinct CVLAN. Each ISP router 300, 302 may either

share a VLAN identifier space with one or more other routers belonging to the same ISP or have its own dedicated VLAN identifier space."

In this citation, ***Delaney*** does not assign a VLAN to a unique network service provider. ***Delaney*** specifically states "each customer can choose his router-access VLAN identifiers arbitrarily. There is no requirement that VLAN identifier choice be coordinated between multiple customers." Thus, one customer may choose a VLAN identifier to correspond to one network service provider, while another uses the same VLAN identifier to correspond to a different network service provider. There is simply no partition of the network in which at least two VLAN identifiers in the plurality of VLAN identifiers are assigned to unique network service providers as called for in Applicant's limitation. In each of Applicant's independent claims, except for Claim 286 addressed above, the limitation appears in the claim. As such, the examiner has failed to make out a prima facie case of obviousness for the independent claims under 35 U.S.C. 103(a).

Concerning dependent claims 163, 164, 198, 199, 215, and 216, the Examiner concedes that "***Meier*** did not explicitly state that his system could utilize IEEE 802.1p or enforce a predefined quality of service metric to a VLAN." However, ***Meier*** makes use of the 802.1Q protocol, and the Examiner alleges that using the 802.1p protocol would be a clear extension of ***Meier***'s system since 802.1P was designed for use with the 802.1Q. As ***Meier*** states, "The IEEE 802.1Q standard specifies a virtual LAN (VLAN) protocol that runs on top of the IEEE 802.1D protocol for MAC bridges/switches." (Col. 2 lines 35-37). On the other hand, IEEE 802.1p is a standard that provides traffic class expediting via Quality of Service (QoS) metrics and dynamic multicast filtering. ***Meier***'s invention relies on a different extension of the 802.1D standard for dynamic multicast filtering, namely GMRP. As ***Meier*** states, "GMRP (GARP Multicast Reservation Protocol) is used for dynamic multicast address filtering and also runs on top of GARP. GMRP is part of the 1998 IEEE 802.1D standard." (Col. 2 lines 35-37). The standard 802.1p is thus an alternative to replace ***Meier***'s use of GMRP, not an extension to ***Meier***'s use of GMRP. ***Meier*** does not suggest, teach, or motivate the use of Quality of Service metrics

in selectively providing access to a portable computing device, not does it suggest, teach, or motivate expediting traffic classes.

Accordingly, the Examiner has failed to make out a prima facie case of obviousness. In light of the foregoing, Applicants believe that all currently pending claims are presently in condition for allowance. Applicants respectfully request a timely Notice of Allowance be issued in this case. If the Examiner believes that any further action by Applicants is necessary to place this application in condition for allowance, Applicants request a telephone conference with the undersigned at the telephone number set forth below.

Respectfully Submitted,
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